

University News

MONDAY, OCTOBER 23, 1989

Rs. 2.50



Union Minister for Human Resource Development, Shri P. Shiv Shanker, opening the Artificial Intelligence Laboratory at the University of Hyderabad Campus. On his left is Prof. Bh. Krishnamurti, Vice-Chancellor.

CLASSIFIED ADVERTISEMENTS

DELHI INSTITUTE OF TECHNOLOGY

OLD I.G. BLOCK : KASHMERE GATE
DELHI 110 006

Advertisement No. 2/89

This Institute is looking for faculty members and other staff to fill regular positions as given below. The scales of pay for teaching staff would be revised as communicated by the Ministry of HRD w.e.f. 1.1.86 shortly. All the scales carry allowances as per Central Govt. rates. Suitable increments are permissible commensurate with qualification and experience.

Designation	Pre- Revised Scale of Pay	Total Minimum Emoluments in Revised Scale of Pay
Project Leader	Rs. 700-1600	Rs. 3498/-
Asstt. Professors	Rs. 1200-1900	Rs. 5790/-
Professors	Rs. 1500-2500	Rs. 6790/-

Age limit will be reckoned from 06.11.89.

The recruitment rules (provisonal), designations, number of vacancies and specializations for the various positions are as given below. The Institute reserves the right to change the vacancies.

Designation	No.
1. Professors	4+1 Nos.
Specialization	
Electronics & Communication Engg./	
Computer Engg./Inst. & Control	—4
Head computer centre	—1

Qualifications and Experience

Essential

- (i) A Ph.D. Degree in the appropriate field.
- (ii) 10 Years experience in teaching/ research with at least 5 years in teaching in an Institution with University level of teaching at graduate/postgraduate levels/ R&D Organization in the area of specialization.
- (iii) Specialised knowledge in one or more fields.

(i) Evidence of Research and Development activities by way of Publications/Patents.

(ii) Experience in guiding research with documentary evidence.

Age : Not exceeding 50 years.

Note I

Qualification and experience are relaxable at the discretion of the Selection Committee in case of candidates otherwise well qualified. In case of Engineers with outstanding R & D experience, the requirements of the Ph.D. degree and teaching experience can be waived.

Note II

Recruitment Rules for Head Computer Centre are the same as for Professor Computer Engg.

- | | |
|---------------------------|----|
| 2. Asstt. Professors | —4 |
| Electronics & Comm. Engg. | —1 |
| Computer Engg. | —3 |

Qualification and Experience

Essential

- (i) Master's Degree in the Eng Tech. from a recognised University or equivalent in appropriate field.
- (ii) 5 years experience in teaching research in the required field in an Institution with University level of Teaching/R&D organization.

Desirable

- (i) Doctor's degree in the relevant field.
- (ii) Evidence of Research and Development activities by way of Publications/Patents.

Age : Not exceeding 45 Years.

Note I

Qualification and experience are relaxable at the discretion of Selection Committee in case of candidates otherwise well qualified. In case of Engineers with outstanding R & D experience, the requirements of Ph.D. degree and teaching experience can be waived.

3. Project Leader—1

(Science & Technology Entrepreneurship Cell at D.I.T.—Project of Dept. of Science & Technology Government of India.)

Qualification & Experience

At least a graduate in Engineering Technology or a postgraduate in a branch of Science, Mathematics, Economics or Business Administration.

(ii) At least two years in Industries promotion / industrial consultancy/entrepreneurship development.

Last date of receipt of Application 06.11.1989.

For Application form and other details, please see Employment Notice of 14.10.1989.

PROJECT OFFICE

UNIVERSITY NEWS

VOL. XXVII

OCTOBER 23

No. 43

1989

Price

Rs. 2.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :

SUTINDER SINGH

Democratising the Governance of Universities and Colleges

Srinivasa Narayanaswami*

The strength of any educational system and the contribution it can make to the socio-economic and cultural development of a nation, depends, to a large extent on the vitality of its institutions of higher learning. It is equally true that the national environment directly affects the functioning and quality of that system. Some of the problems which we face today in the sphere of higher education are due to the structure of varsity education in our country, which we have inherited and which we have continued with some patch work, with small changes here and there.

Independent India had 27 Universities and 542 Colleges when the Republic of India was declared in 1950. Today we have over 180 universities and about 6500 colleges of all types. Both private agencies and government run these Colleges. A few among them are given autonomous status. Among the universities we have three types: unitary, affiliating and institutions deemed to be universities. Where higher education has suffered in post-Independent India is not in quantity but in quality. This warrants drastic restructuring both in the concept and functioning of the institutions of higher learning.

The collegiate/varsity teachers' organisations in the country also plead for a more rational and democratic governing norms for the administration of colleges and universities. In their efforts to socialise higher education, they have time and again exposed the anachronisms in the content and structure of the universities and colleges. There has been a persistent demand for the representation of teachers, non-teaching staff and students in the university bodies. In a few States where representation was available greater numerical representation of teachers, employees and students has been urged.

The Gajendragadkar Committee, which was appointed in 1968 to study the governance of universities and colleges accepted the need for reforms but was biased against the elective principles.

Those directly involved in the process of higher education are the Education Departments of the government (both Centre and States), the universities, the constituent colleges, teachers, students and the non-teaching administrative staff. The collective consciousness of the intelligentsia of these sections has to act as the factor controlling the higher education policies of the government and the universities.

The primary responsibilities of a university are to provide for institution and training in such branches of knowledge as it may deem fit, to provide for research and advancement and dissemination of knowledge, to hold examinations and to confer degrees, diplomas and other academic distinctions.

In the present set up, the government and the university are the two governing bodies of higher education. The government plays a

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dominant role in controlling the finances, in the appointment of the Vice-Chancellor and in exercising influence through its nominees and ex-officio members in various bodies of universities. The Director of Collegiate Education as the government representative in a university often assumes the powers of the university in granting affiliation to new courses or colleges. There is utter lack of coordination between the university and the government. The government always adopts a big-brother attitude in its dealings with universities. This may even be construed as a notional assertion by government of its authority over universities and its financial commitment towards them.

Academic Freedom

A university, essentially is a community of teachers and learners both engaged in the research of true knowledge and if they are to pursue their search and studies fruitfully, they should be able to live and work in an atmosphere of truthfulness and fearlessness. Under no circumstance their freedom to enquire and expose their findings be constrained and controlled by external forces and agencies. One of the major reasons for the deterioration in the standards of university education and research and their proper and smooth functioning has been the gradual erosion of their autonomy and academic freedom which are so essential for the healthy growth of any university. The tendency of representative of the government to impose in all respects the prevailing sentiments of the public majority is as natural and fundamental as the need of the university to resist that tendency directed against itself. Excessive domination on the part of the government seldom results from malevolent will that is ruthlessly enforced. It grows from the frailty of resistance on the part of the governed who accept successive mixtures of benefits and burdens until it is too late and they have become subjects rather than remaining citizens. The university is the only institution in modern society that is largely supported by society and yet claims a unique autonomy to criticize the very society that gave it birth and gives it financial support. There will always be governments and other university sponsors who will gag this demand of autonomy, and it is therefore very necessary that the university administrators should be alert on this issue at all times and maintain the university autonomy against all external and internal threats to the essential independence of the university community. Those who govern must also preserve the academic freedom of the university. The most

obvious modern threat to this academic freedom is the modern move to politicize the university and in a politicized university academic freedom becomes a travesty.

Affiliating universities, though they frame syllabi, lay down qualifications for teachers, fix norms of attendance for students, appoint examiners and question paper setters and send their representatives to be in the governing councils of colleges, cannot exert control over private managements. Private colleges are governed by religious trusts, trusts representing castes, community, businessmen and landlords and the teacher is placed at the mercy of employers whose policies are governed by vested interests, parochialism and nepotism. If the university dares to issue directives the private managements promptly ignore them.

In Government Colleges the teachers have to serve under the constant surveillance of bureaucratic torpor. The authorities try to penalise the teachers for their sense of freedom. Teachers are transferred quite frequently from one college to another even in the middle of the academic year much to the disadvantage of the students and the teachers themselves.

The two masters of higher education today are the government and the university. The former is the paymaster and the administrative head, and the latter the academic head. They seldom work in consonance. This heterogeneous dichotomy has done the greatest harm to the varsity learning. It is high time a single Bill, a comprehensive University Education Bill is formulated.

Basic Principles

The concept of a democratic structure of educational administration involves three basic principles :

- (a) Participation by all those who are directly involved in the organization and imparting of education, such participation being sought by election;
- (b) General supervision and control of education by the society through elected representatives of professional, cultural and social organizations and prohibition of undemocratic interference by the government, i.e. a complete societal autonomy for education; and
- (c) Democratic composition of all units of administration from the highest body in the university to the smallest department in a college and

responsibilities to be treated as joint or collective and not as that of individuals.

On applying these basic principles of democratisation, the following national objectives emerge :

1. Abolition of differentiation among colleges and an amendment to status differences between colleges and universities,
2. Abolition of private ownership and management of colleges and universities and socialization of education with the administration controlled by democratised bodies and not by bureaucrats and vested interests,
3. Integration of undergraduate education and postgraduate education and doing away with the categorisation of the two institutions and teachers,
4. Rationalisation and limiting the geographical area of the affiliating universities,
5. An end to the system of membership by nominations and ex-officio membership in the administrative bodies, and
6. Administration of the universities/colleges/departments at the executive level by a committee including teachers, non-teaching staff and students.

Alternative Structure

An alternative structure could be devised both at the university and college level as follows :

At the varsity level the Senate/Court should be the supreme body. Only the legislature should have powers to overrule or amend the decisions of the Senate.

The Senate/Court must be an elected body comprising the representatives of teachers, non-teaching staff, students, other professional organisations, trade unions and registered graduates.

The Senate in turn will elect the Vice-Chancellor and the members of the Executive Syndicate and other smaller bodies like selection committees, adhoc councils, etc.

The teacher members of the syndicate will be whole-time office-bearers of the university, while others will attend meetings and perform supervisory duties vested in them.

The majority of the members of the Academic Council will be drawn by election from various departments of study at the university and colleges. It will also have as nominated members experts from other universities. The academic council will decide on all academic matters relating to syllabi, academic standards, examinations, constitution of boards of studies and examiners. The academic council will also be responsible for interdisciplinary coordination.

Headships at all levels in all departments both at the university and the collegiate levels will be by rotation. A general body of such heads of departments will elect an executive which will submit periodical reports and recommendations to the Academic Council.

At the collegiate level, the principalship will be by rotation from a panel of senior members of all departments. The principal will not hold charge of any department, but will function as a coordinator. Headship of each department will be by rotation.

Every College will have an elected Senate consisting of teachers, non-teaching staff and students. The Heads of Departments will be ex-officio members and the Principal, the Chairman. The College Senate will elect the College executive council or College governing body.

All elections will be by the booth system of secret ballots on the basis of proportional representation.

The affiliating university will enjoy jurisdiction over all the affiliated colleges. The directives of the university will be implemented by the college, failing which the university will have the authority to dissolve the governing body and appoint an ad hoc governing body.

The legislature will frame the broad objectives and general policies of the university, in the interest of the people. It will have powers to impose corrective measures on the university. The government departments will have nothing to do with the administration of the university and colleges.

The All-India Federation of University and College Teachers Organisations (AIFUCTO) decided in 1974 that the demand for greater representation of teachers, non-teaching staff and students must be linked with issues like security of service, more autonomy for university and colleges, nationalisation of education and a democratic system of education. Hence the demand for democratisation of varsity and college governance is not an isolated issue.

In democratising the structure of education, the differences shall be removed from institutions like government and private, undergraduate and postgraduate autonomous and non-autonomous, urban and rural, expensive and ordinary, high standard and low standard and the university and colleges. The differences obtaining between the teachers working in expensive institutions and poor institutions, elite students and low class students shall also go by this.

Democratising the governance of universities and colleges is not just a demand but the need of the hour. To serve the society, colleges and universities must have people's representation for their policy making process. This is the real issue. □

Twenty Point Programme on Autonomous College-University Relationship

Om Prakash*

The success of the experiment of autonomy depends to a very large extent upon the understanding and encouragement colleges would receive from the authorities that normally control them, namely, the university and the state government. The essence of autonomy is accountability, which is quite different from a system of checks and controls. The mechanism of control works on the postulate that the controlling authority is always right, the controlled must simply obey the controller. All thought process rests with the superior authority which can also make deviations from set rules in the name of discretion and even express unfettered 'desires'! The hallmark of subordinate authority is obedience, the more unquestioning it is, the better. Whenever in doubt, the subordinate should only refer the matter to the superior rather than taking a decision of its own. On the other hand, the axiom of accountability is that everybody with a brain, must be trusted for taking decisions according to accepted norms and set policies. Where uniformity is desired, coordination meetings could be arranged and unambiguous directions given for guidance, but the autonomous body must be largely free to draw its own regulations and to devise its own procedures with a view to attain the goals and objectives set before it. The superior authority will only ensure that the subordinate body does not work against accepted policies and is not irrational, capricious or discriminatory its acts and actions. In this sense, no doubt, the autonomous college would be accountable to the university, to the state government and to the society at large, without being unduly controlled by any of them. The substitution of the age-old habit of bureaucratic controls by the concept of autonomy and accountability is a very delicate matter, for which a thorough understanding needs to be developed. The UGC and the NIEPA will do well to organise a series of workshops, first to develop this understanding and then to disseminate it among the vice-chancellors, the secretaries and the directors of education besides the principals and the members of governing councils of autonomous colleges.

Talking specifically of the autonomous college-

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university relationship, there is no denying that an autonomous college is also an affiliated college and its graduates receive their degrees and diplomas from the university. But it cannot be denied also that the autonomous colleges are intended to be treated somewhat differently from other officiated colleges. If, at every exercise of autonomy by a college, someone in the University was to feel slighted and was to remark that the college no longer cares for them, then not only the students and their guardians would be confused any dismayed but also a distrust for the college would be generated.

To take a simple example, an autonomous college is to prescribe its own admission rules and procedure, subject to the minimum eligibility conditions prescribed by the university and to the reservation policy of the State. The college may try to complete the admissions expeditiously well before the general last date prescribed by the university for all colleges. In a few less popular subjects, seats are likely to remain vacant for lack of eligible candidates. Those denied admission by the college are sure to approach the university, more easily if, unfortunately, its office happens to be situated in the same city. Now, the vice-chancellor and his officers may give three types of responses. First, they may just not entertain any complaint against the autonomous college, and ask the aggrieved to approach the college, its governing council or its chairman. This would be stoic indifference, and is fair enough. Second, they may go out to support the college by admitting that even the autonomous college is not permitted to dilute the eligibility fixed by the university and that the university never intended to interfere in the admission time-table of an autonomous college. This would be a welcome encouragement to the college. Third, the complainants may be turned back, but with unwanted remarks that in spite of all sympathies the university has for them, they are unable to do anything since the autonomous college does not listen and does not care for their notifications. This is sure to generate hostility against the college, for, this leaves the society wondering as to what kind of autonomy is this, which curtails but not adds to the relaxations and benefits that the university is apparently willing to grant so readily.

The examples and issues can be multiplied. What is intended to be conveyed here is that the affiliating university and its vice-chancellor can contribute a great deal to the success of this experiment not only by developing a clear understanding of the extent of autonomy of colleges but also by expressing this in encouraging terms to the public. Some points on which such understanding needs to be developed may now be listed without trying to be exhaustive.

- (1) The autonomy is conferred upon the colleges with the view to improve academic standards, but not to give them any license to dilute the same. They are bound to observe the minimum conditions prescribed by the university for all affiliated colleges.
- (2) The autonomous colleges are to be encouraged to prescribe more exacting academic programmes and demanding eligibility conditions in their quest for quality, without being elitist.
- (3) The autonomous colleges are to be pace-setting in matters of following UGC regulations and guidelines, such as those for examination reforms, number of working days, workload of teachers, appraisal of teachers' work, and so on, even if the university is unable to push through such reforms in all its colleges.
- (4) In view of the above three points, which are almost axiomatic in nature, the autonomous colleges are free to frame own rules and regulations which would be different from the ordinances in the university handbook.
- (5) Different and more demanding rules and regulations of autonomous colleges do not amount to any discrimination against their students as compared to the students of other non-autonomous colleges. The students are free to join the more challenging stream of autonomous colleges or to remain with the masses.
- (6) The university should make it known that notifications issued and amendments in rules made for non-autonomous colleges need not apply to autonomous colleges unless they are adopted by statutory bodies of the latter.
- (7) In order to lend credibility and stability to the autonomous colleges in their functioning, no

change, deviation or exception in the university ordinances applying to them should be ordered with retrospective effect.

- (8) The university should permit easy movement and exit of students from the more challenging autonomous stream to non-autonomous or non-collegiate streams. Sometimes such movement is necessitated by transfer of parents, marriage of girls or students finding jobs. The students of non-autonomous colleges can easily change to non-collegiate category, and in fact they are compelled to do so on falling short of required attendance in their classes.
- (9) The opportunities of earning university gold medals, scholarships, captainships and other positions in the academic as well as cocurricular fields should be equally available to students of autonomous colleges.
- (10) The university should not curtail any of the privileges enjoyed by the teachers of affiliated colleges on their college becoming autonomous.
- (11) The university should give special representation to the teachers and the principals of autonomous colleges on its statutory bodies, so that their opinion on various proposals and enactments is known timely and proper rapport is created and maintained.
- (12) The autonomous colleges should be encouraged not only to frame their own syllabi for the routine courses but also to introduce new, diversified, interdisciplinary courses with the approval of their own boards of studies, academic committees and governing councils on which university already has its nominees as watchdogs of standards. Formal affiliation, if deemed necessary, could be granted summarily without following the usual lengthy procedures.
- (13) The university should lend support to autonomous colleges in conducting their examinations in matters like arranging blank answerbooks, contract with computer firms for processing the results, etc.
- (14) The university should free the autonomous colleges from the burden of accepting forms and conducting examinations of its non-colle-

giate candidates, so that the college staff may attend single-mindedly to their own work and also to avoid confusion and unwanted comparison between two different examinations under different schemes.

(15) When different and parallel examinations on similar courses are conducted, the examinees of one are bound to feel that the papers in the other examination were easier and theirs were more difficult. The university should not encourage such petty feelings of rivalry and jealousy.

(16) The external examiners of the autonomous colleges would know the name of the college for which they are setting the papers. The anonymity would, thus be reduced. Secrecy in examinations conducted by autonomous colleges needs to be underscored afresh in this context.

(17) The procedures for students of autonomous colleges getting their degrees, provisional certi-

ificates, migration certificate, etc. from the university should be simplified.

(18) With a view to relieve the autonomous colleges of the responsibility of keeping the examination records for decades, the university may come forward to accept their safe custody once they are submitted by the college after finalising revaluation and unfair means cases. The university may issue duplicate marksheets to old students of autonomous colleges in the same manner as it would be issuing duplicate degrees anyway.

(19) The university should nominate only such members upon various bodies of the college as are keen to work for its development and not such as would only remain sleeping partners.

(20) Unless the university hears anything from its nominees on various bodies of the autonomous college, it should refrain from exercising its powers of superintendence and control that undoubtedly extend over the autonomous colleges as well. □

PHYSICAL RESEARCH LABORATORY

NAVRANGPURA, AHMEDABAD-380 009

The Physical Research Laboratory makes four awards called "Shri Hari Om Ashram Prerit Dr. Vikram Sarabhai Research Awards", every two years from funds kindly donated by Pujya Shri Mota of Hari Om Ashram of Nadiad. These awards will be made to Indian Scientists, who are below 45 years of age, on 1st January, 1989 for original work in the following fields :

- (1) Space Sciences (including Astronomy, Astrophysics, Planetary and Atmospheric Sciences).
- (2) Space Applications (in the areas of Meteorology, Hydrology, Remote Sensing and related ground truths).
- (3) Electronics, Informatics, Telematics and Automation.
- (4) Systems Analysis or Management of non-linear, non-equilibrium systems in natural and social sciences and technology.

Although the overall work of the candidates would be taken into account, the work done in India would be given primary consideration.

The candidate should have to his credit at least one or more of the following achievements :

- (1) Significant achievement in scientific research.
- (2) Important and successful adaptation of new technology.
- (3) Planning, development and implementation of systems in the context of science and technology.

The selections for the year 1989 will be completed by February, 1990 and the awards presented on 12th August, 1990.

The last date for receiving nominations is **December 15, 1989**. Sponsors are requested to send a two page note (12 copies) summarising the contributions and achievements of the sponsored candidate together with his/her biodata in a cover marked confidential, addressed to the Director, Physical Research Laboratory, Navrangpura, Ahmedabad-380 009. Only nominations made for the year of the award would be considered.

More detailed information will be asked for by the Selection Committee, if considered necessary.

Higher Education and Structural Problems of Indian Economy

A.D.N. Bajpai*

Indian economy is characterised as 'developing economy'. It is backward in comparison to various developed countries of the world from almost all the economic norms. There are so many causes for this backwardness. Therefore, the economists, the planners and policy makers should investigate whether the problem of backwardness lies in our 'structure' or it is 'cyclical' in nature.

Structural Vs Cyclical

The economic problems which emerge out of temporary maladjustment in demand and supply forces are known as 'cyclical'. The case of depression of 1930's may be well-quoted in this context for which Lord Keynes had given the formula of increasing effective demand. That formula worked very well in solving the problem of unemployment and other connected issues in England. But the 'Structural problems' are not the outcome of any mismanagement of demand and supply. Rather they exist in the inherent economic system of the country. The economic structure can be defined in various ways. On the ground of activities it can be defined as a composite of consumption, production, distribution and exchange activities. On the ground of resources, it can be defined as a composite of human, natural and physical resources. Further, on the ground of factors of production, it can be defined as composite of land, labour, capital, enterprise and management. Besides, there is another ground i.e. the ownership over factors of production. It means that the economic structure can also be defined as composite of landlords, labourers, capitalists, entrepreneurs and managerial class. There may be other classifications also but what actually a structure means is the human resources (population) with their quantitative and qualitative dimensions; the natural resources inclusive of land, water, mineral and others; the physical resources which include capital, machines, buildings, and others. These three components keep on interacting with each other in so many ways. Actually, the economic development depends upon the intensity and the direction of such interaction of different resources of the economy.

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So, if the problems are generated through any of the components of the structure or its interaction with any other, these may be termed as 'Structural problems'.

Main Economic Problems

The main problems which our economy is suffering today are of 'unemployment and poverty'. There may be so many other problems also but the most important which should be tackled on priority basis are 'unemployment and poverty'. If we go deep to analyse these problems we find that these problems have emerged from our structure only.

The problems of 'unemployment and poverty' both are 'inter-mingled ! We cannot think of decreasing poverty ratio without increasing employment-potential. This is the employment which can provide a perennial source of income to ameliorate the standard of the poor. By employment, is meant the gainful employment, not employment for the sake of employment. In more detail if the causes of unemployment are analysed from a macro perspective, it is found that on one hand the applicants on live registers of employment exchanges are increasing, on the other hand, the number of placements is decreasing. In 1971 there were 51 lakh persons unemployed on live registers maintained by employment exchanges in India. The number of unemployed has increased to 3.02 crores in 1987 i.e. about six times in comparison to 1971. On the other hand the economy gave placements to 5 lakh persons in 1971. However the number of placements has maintained diminishing trend. In 1987, only 3.3 lakh persons could get placements. This is the present scenario.

There are two main sources of unemployment in our country : population growth and diminishing diversification of economic activities. The population is increasing very rapidly. During 1951-61, our population was increasing by 7.5 million persons per annum, during 1961-71 by 10.7 million persons per annum, during 1971-88 by 13.2 million persons per annum. It shows that annual increment to existing population has been increasing throughout. This has

generated pressure over the available resources. In our country, the size of population determines all other economic dynamics. Though entire population does not constitute labour force of the economy, but a particular class which falls under the age group 15 to 59. Even then as the population increases, chances of increase in this age group also increases. Hence, the number of job-seekers increase. Secondly, whenever we talk of diversification of economic activities, we look into the matter of ownership over factors of production. There are two main factors of production land and the capital by which the entrepreneur starts any activity with the help of labour, management and technology. This ownership over the land and capital is the determining factor for economic diversification. The latest statistics reveal that about 74% arable land is owned by 25% large holders and remaining 26% by 75% small holders. This shows how one of the major factors of production is concentrated in few hands. And the problem of rural unemployment or rural poverty can never be solved until and unless this maldistribution of land assets is rectified rationally. As far as capital is concerned, its position is still worse. 93.4% of total fixed capital is blocked in only 9.3% factories and 6.4% capital is distributed over remaining 90.7% factories. In this situation how can any economy think of increasing informal sector, self employment generating sector or small scale sector. Here it will not be out of place to mention that there is very little scope of additional employment generation in organised sector. Therefore, without increasing informal sector, our economy cannot tackle the problem of unemployment or poverty. This informal sector can only emerge when the resources are released from the clutches of the few. The resources provided by the state, are no doubt helpful but their catchment and effect is very limited and unable to face such a situation.

In this context, it may be mentioned that our problems of unemployment and poverty are the product of our system, our structure. Therefore, only structural changes can cure these problems, not the adhoc methods which are being used.

Role of Higher Education

Now the question is, what higher education can do in this respect. In my opinion, entire education-system should have only three components. First, to make the people literate; second, to make the people informed about the social, economic and political structure, and third, to educate the people

in such a manner that they may take rational decisions, to understand the changes taking place in the system, to analyse the prevailing problems and searching possible solutions. In this way the functions of primary, secondary and higher education can be distributed. The higher education should help the individual in exploring better job opportunities and also creating an atmosphere in which the problems especially the structural problems don't emerge. Thus, those incharge of planning for higher education should frame the curriculum in such a manner that the students are made aware of the problems, their real causes and solutions, the teachers of higher education should keep on evaluating the economic plans in an objective manner and inform their results to their students. Further, the institutions of higher education located in different areas may take the responsibilities of identifying the local problems and suggesting the possible cures to the local administrators. In sum the higher education should be capable of studying the structural problems and recommending certain guidelines to the policy makers.

Conclusion

In conclusion, it can be said that our problems are structural problems. These are not of cyclical nature which can be solved by simple demand-supply gimmicks. We will have to tackle the problems by doing—some changes in our structure mainly in population dynamics and ownership over factors of production leading to diversification of economic activities. Higher education can play a vital role in this respect. Higher education cannot remain confined to the provision of degrees and diplomas, vocational and professional training to the individuals but it will have to recurse with the system, with the structure so that the problems may be studied, analysed and possible cure-options may be recommended for a better future. □

TO OUR READERS

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

Agricultural Situation in the Konkan Region

While detailing the problems and prospects of the agricultural economy of the Konkan region of Maharashtra and the role of the Konkan Krishi Vidyapeeth, Dr. N.S. Randhawa, Director General of the Indian Council of Agricultural Research and Secretary, Department of Agricultural Research and Education, Govt. of India, observed : "The Agricultural Universities are responsible for providing the manpower to ensure scientific agriculture with emphasis not only on increased productivity but also on consideration of economics, ecology, employment generation and energy conservation. These institutions should train the new generation of leaders with capacity for more precise estimates of potential and a vision to forecast problems, analyse constraints and find out solutions." Dr. Randhawa was delivering the Convocation Address at the fifteenth convocation of the Konkan Krishi Vidyapeeth. Excerpts

Agricultural Scenario

The jurisdiction of Konkan Krishi Vidyapeeth covers five districts viz. Greater Bombay, Thane, Raigad, Ratnagiri and Sindhudurg. The region is a narrow strip between Sahyadri mountain in the east and the Arabian Sea in the west. This region has hilly terrain and extensive sea coast of 720 km. The region has three distinct agro climatic zones viz.

also receives very high rainfall but has medium black soils. It has about 5 lakh hectares of cultivable land and has about 3% area under forest. The Western Ghat region represents coastal areas which has alluvial and saline soils.

The soils of Konkan region in general are low in fertility, highly permeable, less retentive of moisture, thereby posing problems of soil fertility and water management.

Convocation

South Konkan Coastal Zone; North Konkan Coastal Zone and Western Ghat Zone. South Konkan coastal zone comprises the districts of Ratnagiri and Sindhudurg. Eighty five per cent of the land is undulating and hilly. This zone receives high rainfall ranging from 2000 to 3006 mm with lateritic soils. North Konkan coastal zone comprises of the districts of Thane and Raigad. This zone

Food Crops

Rice is the major cereal crop of the region. Out of 8.42 lakh hectares of total cropped area in Konkan, about 52% is under paddy alone. The average yield is around 1852 kg/ha, which is more than the national average yield of 1458 kg/ha. Similarly another important crop of millet "Ragi" in this region also yields

about 1003 kg/ha. which is again more than the national average yield of 818 kg/ha. But looking to the congenial climatic conditions available in this region for crops like rice and ragi, there is a considerable scope to further increase the productivity of these crops. I would appeal to the faculty and students, to channelise their efforts in this direction because in future the additional food requirements will only be possible through enhanced productivity and increased intensity of cropping. The important pulse crops in this area are 'tur', horse gram, lablab bean, cowpea etc. Pulses are grown in about 55,000 ha. But the yields are very low, with an average of only 219 kg/ha, which is much lower than the national average of 545 kg/ha. I have been informed that the mustard crop has shown promise in this area.

Horticultural Crops

Horticulture has been identified to be potentially the most important and paying farm pursuit in the South Konkan Coastal Zone. Due to typical soil and climatic conditions, this area is ideally suited for horticultural crops like mango, coconut, cashew, kokum, jack fruit, etc. Alphonso mango varieties are in great demand in the national and international markets and can strengthen the economy of this area. We have yet to explore the full potential of this crop for much needed foreign exchange earnings. Plant protection scientists have to work hard to eradicate the spongy tissue disease of this crop.

Spices like clove, pepper, nutmeg, etc. have great potential in this region. There is also a scope for rubber and oil palm plantations in this area. I hope

the State Government and the university will focus their future R&D efforts in this direction. Looking to the feasibility of growing oil palm, ICAR has sanctioned a centre of the All India Coordinated Research Project on Oil Palm, to this university in the year 1988. The university has started in right earnest by procuring 400 plants of oil palms of 27 exotic varieties. The performance of these varieties is being evaluated at the agricultural research station MULDE in Sindbudurg district. It is heartening to learn that the university has established a good nursery and the university is supplying lakhs of fruit saplings, mainly of mango, to needy farmers of this area. The Council has also expanded the mandate of National Agricultural Research Project (NARP) to include horticultural crops. The university is taking advantage of this project to develop various regional research stations including fruit research station at Vengurla.

Animal Sciences

Konkan region has a large cattle population consisting of about 5.15 lakhs of breedable cows and 2.60 lakhs buffaloes with a total milk production of about 2.28 lakh tonnes. The average milk yield per breedable female is about 525 litres per annum. The average yield of milk of buffaloes and crossbred cows is about 1510 litres and 2260 litres per annum respectively. The low productivity of milk is primarily attributed to the inadequacy of green and nutritious fodder. I would urge that the Bombay Veterinary College should provide a strong S & T backstop to improve the livestock wealth in this region.

Fisheries

The Konkan region is gifted

with 720 km. long seacoast and fishing is an important enterprise in the 352 coastal villages. There are around 12,000 fishing boats (mechanised and non-mechanised) engaged in fishing operations. The total marine fish production in 1984-85 was 3.7 lakh tonnes which is about 15% of the total fish production in the country. There is a great potential for increasing fish production in the region not only by the capture fishery but also by culture fishery. There also exists scope for inland fishery in the region. About 8,730 hectares of water bodies as ponds/reservoirs have been identified and need to be fully exploited for inland fishery. Some area of the coastal saline soils (65,000 ha.) can be brought under brackish water fish farming.

Controlled breeding of marine shrimp (*Penaeus merguensis*) is a significant achievement of this university. Fish seed hatchery-cum-spawn equipment developed by the university is recommended for maximisation of seed production of fresh water fisheries by improving the hatching and survival percentage of fish eggs.

The survey undertaken by university on economical and biological implications of purse-seining cum trawling has indicated that purse-seining causes heavy depletion of fish population. Therefore indiscriminate fishing needs to be controlled. The university has suggested to the State Department of Fisheries and other agencies, to control purse-seining outside 8 fathoms off the shore. The purse-seiners should not be permitted to carry small boats and should not start purse-seining before 1st October.

Extensive trials of rice-cum-fish culture have shown that fish can

be grown successfully in rice fields. This method is particularly suitable for summer rice cultivation. It is possible to obtain a fish yield of nearly 120 kg/ha in three months in addition to rice crop. Though the faculty of the college of fisheries Ratnagiri has been doing a commendable job with limited resources. I would like them to strengthen their activities. To achieve the desired objectives, the college of fisheries would need special assistance. I would request the State Government to consider sympathetically the additional support to this college.

Food Security

The foodgrain production in the Konkan region has been increasing at the rate of 4.4. per cent annually during the period from 1972-73 to 1984-85. The present (1988-89) foodgrain production is estimated at 11.01 lakh m.t. After deducting the seed requirement and storage losses, net availability works out to 9.18 lakh m.t. The population is estimated at 82.22 lakh (excluding Greater Bombay). At the current level of foodgrain availability of around 178 kg/capita/annum, the requirement for regional food security works out to 14.6 tonne. By the turn of this century the population may further increase to about 10 million and foodgrain requirements will be around 18 lakh m. t. The university has to strive hard to ensure sustainable food security within this region.

The aim of the university should be to strengthen its research efforts on integrated farming systems. The country has achieved in the past a quantum jump in food production through imaginative crop improvement strategies involving hybrids, high yielding

and composite varieties of crop. We have yet to realise the untapped potential of those varieties which would demand considerable emphasis on the management aspects of production agriculture. There is a great scope for improving efficiencies of various inputs like soil, water, nutrient, energy, plant protection including the post harvest handling of agricultural products. There is a need for balanced fertilizer use through greater use of phosphorus and potassium relative to nitrogen. Similarly organic resources are not being fully exploited. The scientists of the university may initiate need based research on above management aspects so that the farmers could realize the full benefits from the same.

National Scenario

In the national scene, the current year marks a period of strong recovery in agriculture. Following a poor monsoon during 1987-88 when food production declined to 138 million tons. Despite severe drought and floods in certain areas, the agricultural sector as a whole is likely to record a growth of 17 to 20 per cent. The food production, this year, is expected to reach 170.00 million tons. Similarly other crops like oilseeds, cotton are also likely to show record performances. A super computer recently installed in Delhi will assist in better understanding of climatic parameters and will promote stability in production in the rainfed agricultural areas of the country. We are also involved in planning of agricultural production at the agro-climatic regional level for which a central planning group has been set up by the Government to evolve ecologically efficient land use systems.

The agricultural universities are

responsible for providing the manpower to ensure scientific agriculture with emphasis not only on increased productivity but also on consideration of economics, ecology, employment generation and energy conservation. These institutions should train the new generation of leaders with capacity for more precise estimates of potential and a vision to forecast problems, analyse constraints and find out solutions.

Transfer of Technology

The important extension education activity of the university is to train extension personnel of the State Department of Agriculture and Zilla Parishads. The training and Visit System of extension was started in this region during 1980-81. The training includes induction training to VEWs and monthly and zonal workshops for the officers of T. & V. In addition, special classes ranging from three to seven days duration are organised for the farmers to impart training in improved technologies and new skills. The areas of training include grafting, cultivation of crops, plant protection, dairy cattle management, poultry management, sericulture, etc. Other extension activities cover farmers rallies, workshops, group discussions, demonstrations, farm visits, etc. University scientists disseminate new technologies through radio and television. The university publishes technical bulletins, leaflets and folders on specific topics for the benefit of farmers.

National Demonstration Scheme has been in operation in this region from 1971. In the beginning it was in Thane district, it was then shifted to Ratnagiri district, and now it is operating in Sihdhdurg district. Most of the demonstrations are on rice crop. Per hectare

yield of rice in N.D. plots have been around 45 quintals.

Two Operational Research Projects of the ICAR are in operation in this university. One of them is on integrated control of rice stemborer in Thane and Raigad districts and the other one is on resource development on watershed basis. The main object of the first ORP is to demonstrate to the farmers integrated pest management practices for control of stemborer and other pests and diseases in rice.

The objective of the second ORP is to optimise the productivity of all the available resources in a given watershed. The socio-economic bench mark survey for the entire watershed and the land development work such as nala bunding and terracing has been completed on 12 hectares area. Plantation of mango (32 ha), cashew (10 ha) and social forestry trees (3 ha) has also been completed.

One Krishi Vigyan Kendra is also run by the university under which short duration training classes are conducted for farmers.

I know that the job of extension is the responsibility of the State Government. However, the university has to provide suitable extension models to the State Government so that the transfer of agricultural technology is made simpler and moves faster. There is a need of closer interaction between the universities and the State Department of Agriculture to achieve the common objective of better services to the farmers in increasing their production and improving quality of their life. □

Mr. P. Shiv Shanker, Union Minister for Human Resource Development, hinted at 'additional marks' incentives to students who help promote literacy by actively involving themselves in adult education programmes while addressing the students and the staff of the University of Hyderabad recently. He described illiteracy as the bane of the country with 64 per cent population being unable to read and write and said that unless a concerted effort was made by educated persons, the target of turning 80 million people literate by 1995 could not be achieved.

The fact that we have moved far away from the goal of universalisation of education set to be achieved within 10 years from 1950 is disturbing, the Minister said and exhorted the students to treat it as a duty to educate atleast one person during one academic year. Citing the example of the considerable fall in birth rate in Kerala where the literacy rate was as high as 54 per cent among women, he said that eradication of illiteracy could help find solutions to several problems.

Education would not only make people conscious of their rights but also put them on guard against external threats like the attempts being made by the developed countries to bring the developing countries under their sway in matters relating to services, investment and supply of equipment.

Mr. Shiv Shanker, who was also the chief guest at the valedictory function of the Students Union, asked the students to develop courage and equip themselves well to take up future challenges

and play a role in the socio-economic and political transformation of the society and in ensuring social justice to people. He called upon them to fight casteism, communalism and parochialism and contribute to the process of national integration.

Earlier on his arrival on the campus, Mr. Shiv Shanker visited the Indira Gandhi Memorial Library where he met the Deans of the various Schools and Heads of Departments, the Central Instruments Laboratory and the Health Centre of the University.

Prof. Bh. Krishnamurti, Vice-Chancellor, in his address, profiled the growth of the University and its achievements over the years. He said that the university's perspective plan included the establishment of a School of Management, a School of Education and also a School of Law at the postgraduate and research levels during the next five to ten years. The university has already submitted a proposal to the Ministry of Human Resource Development and the UGC for the establishment of a Postgraduate Institute of Medical Research, Education and Training.

Prof. R.V.R. Chandrasekhara Rao, Dean incharge, Sarojini Naidu School of Performing Arts, Fine Arts and Communication, in his report, said that the School, first of its kind in South India, at present offers postgraduate courses in four disciplines : Dance, Theatre Arts, Painting and Communication (Radio & TV). With this the University of Hyderabad had joined the few select universities in incorporating these fields of human endeavour and experience into formalised university disciplines.

Dr. C.R. Krishnamurthi, Project Director, Integrated Environmental Research on the Cauvery, called upon the officials to tap the expertise in the universities and the academic bodies to assist them in evolving research and action plans to preserve ecology and to control pollution. He was delivering the keynote address at a seminar on the "State of Tiruchi Environment" organised by the Society for Environmental Education in association with the municipalities of Tiruchirapalli, Srirangam and Goldenrock at the Bharathidasan University recently. Dr. Krishnamurthi regretted that the Government departments had failed to tap the expertise available in the universities. He urged the university to create a research department to prepare a historical compendium in Tiruchi and Srirangam flanked by the Cauvery and Coleroon.

On the work on the research on Cauvery waters, Dr. Krishnamurthi said that the universities involved in the integrated environmental research on the Cauvery from the Talaicauvery to Porto Novo, where the Coleroon merges with the sea, were taking water samples to study the dimensions of pollution and its impact on animals, fish, plants, paddy and other crops. He hoped by the end of March 1990, all these universities would be able to provide the basic data on their collections. The data would be processed and a plan to tackle the Cauvery pollution would be evolved within the scheduled time.

The topics discussed at the seminar included : (i) Water Pollution in and around Tiruchy—Assessment and Management; (ii)

Municipal and Industrial Wastes—Disposal, Pollutional and Management Aspects; (iii) Air Pollution in the city area and its impact on human Environment; (iv) Urbanization and its impact on Environmental Quality—Developmental Priorities and Environmental Management Strategies; and (v) Role of Governmental and Non-Governmental Organisations in Environmental Education and Management Programmes.

Dr. S. Muthukumaran, Vice-Chancellor, Bharathidasan University, who delivered the valedictory address, made a specific mention of the relevant and need-based contents of the seminar and called upon multi-departmental co-ordination for solving the environmental issues. He announced that a study of 'Environmental Science' will be introduced in the Bharathidasan University during the Eighth Plan.

Attended by over 70 participants from different Governmental and Non-Governmental Organizations, the seminar provided an opportunity for interpersonal interactions between elected representatives, administrators, executives, researchers, social workers and academicians on various aspects related to Environment and Development.

UGC Panel for Andhra Pradesh

The University Grants Commission (UGC) is reported to have set up a six-member committee for Andhra Pradesh to study both qualitative and quantitative aspects of higher education in relevance to developmental needs. A perspective plan, linking educational system to the needs of State and Central economic developmental plans, will be prepared initially for Andhra Pradesh. This plan is expected to serve as a

model to other States to draw up similar perspective plans.

The committee is headed by Professor G.J.V. Jagannadha Raju, Chairman of the State Council of Higher Education and consists of Professor Jafar Nizam, Vice-Chancellor, Kakatiya University, Professor K. Koteswara Rao, Principal, Regional Engineering College, Warangal, Mr. M.S. Srinivasan, former Joint Educational Advisor, Karnataka, Dr. G.D. Sharma, National Institute of Educational Planning and Administration and Dr. M.L. Mehta, Additional Secretary, University Grants Commission.

IGNOU Video Production Unit Commissioned

The audio-video production set-up of the Indira Gandhi National Open University supplied by the Overseas Development Administration of Britain was recently put into operation at the university's Communication Division in New Delhi.

The first instalment consisting mainly of equipment for duplication and post-production included the U-matic SP Edit Suites, consisting of video recorders and remote control units used in the post-production stage. Other equipment included the Aston 3B character generation unit offering a wide range of colour combinations for writing captions, heading and subtitles. An important addition is the video duplication system, which can copy 20 copies simultaneously. There is also an audio duplication unit.

Speaking on the occasion, the British High Commissioner, Sir David Goodall, observed that employers in his country were more inclined to giving jobs to those who had graduated from open universities. This was because the

students from these universities were exposed to latest techniques in education, and would be more adept at handling sophisticated equipment.

The second instalment for the Communication Division consisting of studio and outdoor equipment supplied by the ODA is expected to be received shortly.

Central Assistance for Anna Varsity

● The Government of India, through the Ministry of Human Resource Development (Department of Education) have sanctioned a sum of Rs. 8.00 lakhs for meeting the recurring and non-recurring expenditure during 1988-89 for implementing the scheme on 'Augmentation of Facilities, Research and Training in Microprocessor Applications' in the school of Computer Science and Engineering at College of Engineering of the Anna University, under New Plan Scheme of the VII Plan period.

● The Department of Atomic Energy, Government of India, have approved the research project, 'Physical properties of materials at high pressures from band-structure calculations' submitted by Dr. R. Asokamani, Assistant Professor of Physics, College of Engineering of the Anna University and agreed to provide the grant-in-aid of Rs. 1,49,900 spread over a period of 3 years from 1989-90 to 1991-92.

● The Government of India, Ministry of Human Resource Development, Department of Education, have sanctioned a sum of Rs. 30.00 lakhs during the year 1989-90 for meeting the non-recurring expenditure for implementing the project on 'B.E.

Degree Course in Printing Technology' at the College of Engineering of the Anna University, under New Plan Scheme of the 7th Plan period.

New PG Courses at Anna University

The UGC have conveyed its approval to the Anna University for introduction of M.Tech. programme in Biotechnology of 3 semester duration and M.Arch programme of 3 semester duration with an annual intake in each of 10 students. It has also agreed to provide the financial assistance in each of the above course to the University for running the programmes for a period of 5 years.

Inter-University Centre for Crystal Growth

Anna University's proposal for the establishment of an Inter-University Centre for Crystal Growth is reported to have been accepted by the UGC, which proposes to allocate about Rs. 1.5 crores, over a period of five years, for this Centre. The Centre would affiliate a number of Institute Associates for encouraging the research personnel of University/IIT system to participate in the activities of the Centre.

AIIMS and Kabul Institute to Cooperate

The All-India Institute of Medical Sciences (AIIMS) and the Indira Gandhi Institute of Child Health in Kabul are reported to have signed a Memorandum of Understanding (MOU) for "bilateral co-operation for five years." According to the MOU, the AIIMS will depute experts and trained personnel in different fields to advise and assist the institute in Kabul.

Five members from the Kabul

Institute will visit AIIMS per year for short term courses up to a period of six months. The AIIMS

will also receive two doctors per year for post-graduate training programmes.

News from Agril. Varsities

National Symposium on Food Processing

Dr. S.S. Johl, Chairman of the Agricultural Costs and Prices Commission, inaugurated a national symposium on the "Development of the food processing industry in Punjab : constraints" at the Punjab Agricultural University recently. He said while diversification in agriculture was becoming a necessity, food processing industry, for example, should maintain international standards of manufacturing and packing to capture the export market.

Dr. Sukhdev Singh, Vice-Chancellor of PAU, who presided, said processing, packing and marketing were the major components of the food industry. To reduce the cost of production, the manufacturers should use simple labels and adopt bulk packaging. He wanted the manufacturers of food products to use locally available raw material and indigenous technology and asked food scientists to have close links with the food industry.

Dr. K.S. Nandpuri, Director of Research at PAU, said that the durum varieties of wheat evolved by the PAU were very suitable for the bakery industry. He was of the opinion that if an effective marketing system for fruit and vegetables was not established, the farmers would be compelled to revert to wheat-rice rotation.

The symposium was organised

by the Department of Food, Science and Technology of the PAU, the Northern India Marketing Association; the Department of Business Management and Association of Food Scientists and Technologists and was attended by about 100 delegates representing various food industrial units and research institutions all over the country.

Second Breakthrough in Wheat Output

Scientists at the Indian Agricultural Research Institute (IARI) have achieved a second major breakthrough in wheat production by developing a dwarf wheat variety that performs well under low input and rainfed conditions. The variety named 'Kundan' has proved to be remarkably adaptable to a wide range of sowing conditions. Right maturity, non-shattering nature, grain quality, resistance to diseases like Karnal-bunt, resistance to lodging and ability to survive under stress conditions are some of the characteristics that are claimed to be present in the new variety.

The Central Committee on Crop Standards Notification and Release of Varieties had originally released Kundan for cultivation under the rainfed conditions in the northern plains zone. However, the subsequent trials under Operational Research and Lab to

Land programmes showed that the variety was equally successful under irrigated conditions where it has yielded upto 62 quintals per hectare.

On an average, it has given a yield of upto 55 quintals in the villages of Haryana, Western UP

and Delhi. The salient feature of the new variety is that it yields high even when sown in late December. It has been found economical to grow this variety both under rainfed and irrigated conditions with high and low inputs. This adaptability is something new.

News from UGC

INSAT-1B Programme of UGC

Between 1st November to 7th November, 1989 the following schedule of telecast on higher education through INSAT 1-B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 12.45 p.m. to 1.45 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

12.45 p.m. to 1.45 p.m.

1.11.89

- "A Return to Nature"
- "Forts of Deccan—H : Bidar"
- "What are Genes? Modern Genetics and Human Welfare—I"

2.11.89

- "Computer Memory—I"
- "Objectives of Language Learning—I"

3.11.89

- "Introduction to Space Communications"
- "Hands at Work"
- "Clean Air—Healthy Living"

4.11.89

- "Genesis—Paul Klee on Modern Art"
- "Gottingen—Currents of the World"
- "Language of the Mute"

5.11.89

No Telecast

6.11.89

- "Monetary Policy in India"
- "The Time Has Come—II"

7.11.89

- "The Basics : Systematic Curriculum Development"
- "Plastics and Polymers in Daily Life—I"
- "New Methods of Fracture Treatment—I"

2nd Transmission

4.00 p.m. to 5.00 p.m.

1.11.89

- "Eyes in the Sky—Remote Sensing—I"
- "Meet an Architect"
- "Discovering Snakes"

2.11.89

- "Power Supplies"
- "The Jodhpur Sandstone—II"
- "Learning a Foreign Language—II"

3.11.89

- "Vedic Mathematics—IV"
- "Comparative Politics"
- "Arid Zone Ecology Phase—I"

4.11.89

- "Change for the Better"
- "Music of North India : Pandit Jasraj"
- "University Round Up"

5.11.89

No Telecast

6.11.89

- "Laser—I"
- "Land Management"
- "A New Way of Controlling Insects"

7.11.89

- "The Basics : Creative Thinking in the Classroom"
- "Ayurveda : Self Sufficient—IV—Sushruta and Surgery"

Scheme to Induct Traditional Scholars

The University Grants Commission (UGC) has selected 25 eminent traditional scholars of Sanskrit, Pali, Prakrit, Arabic, and Persian for induction into the university system. This new scheme, initiated by the Commission on the recommendations of an Expert Committee, is expected to bring together the traditional Indian scholarship and modern learning within the universities.

The selected traditional scholars will be provided with emoluments/honoraria equivalent to those offered to the Visiting Professors. They will be available at the designated university campuses to the faculty members for consultation, to research scholars for guidance, and for giving formal lectures and informal talks. However, some scholars, because of their life-style, may be unable to leave their habitats. In such cases the university/college teachers and research scholars would go to them for guidance and consultation.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertation as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Geeta Devi. *Special functions, integral transforms and applications*. BHU. Dr. M. Bhargava, Department of Applied Mathematics, Institute of Engineering and Technology, Banaras Hindu University, Varanasi.

2. Tiwari, Anjani Kumar. *Modern algebra*. BHU. Dr. B.M. Pandey, Department of Applied Mathematics, Institute of Engineering and Technology, Banaras Hindu University, Varanasi.

3. Trivedi, Jai Narain. *General relativity and cosmology*. BHU. Dr. Shri Ram, Department of Applied Physics, Banaras Hindu University, Varanasi.

Physics

1. Agrawal, Ramesh Kumar. *Eigen value problems*. Delhi. Prof. V.S. Verma, Department of Physics, University of Delhi, Delhi.

2. Akhileshwar Prasad. *Stability of some plasma configurations*. Delhi. Dr. N.K. Nayyar and Dr. S.P. Talwar, Prof., Department of Physics and Astrophysics, University of Delhi, Delhi.

3. Das, Goutam. *Investigations of high temperature superconducting materials and fabrication of HTSC devices*. BHU. Prof. R.S. Srivastava, and Prof. O.N. Srivastava, Department of Physics, Banaras Hindu University, Varanasi.

4. Ganjoo, Ashtosh. *Amorphous semiconductors*. Delhi. Prof. P.C. Mathur and Dr. R.M. Mehra, Department of Physics, University of Delhi, Delhi.

5. Gupta, Asheesh Kumar. *Study of electromagnetic radiation and energetic particles from the sun*. BHU. Dr. B.N. Dwivedi, Department of Applied Physics, Banaras Hindu University, Varanasi.

6. Jain, Rajeev. *Electric and galvanometric problems of thin films*. Delhi. Dr. Raj Rup, Department of Physics, University of Delhi, Delhi.

7. Jha, Pradip Kumar. *Group representations*. Delhi. Dr. K.C. Tripathi, Prof., Department of Physics, University of Delhi, Delhi.

8. Jha, Rajesh Ranjan. *Application of parity violating anomalies to quantised Hall effect*. Delhi. Dr. K. Datta, Department of Physics, University of Delhi, Delhi and Dr. S.K. Soni, Sri Guru Tegh Bahadur Khalsa College, University of Delhi, Delhi.

9. Khare, K.N. *Energy band structure : Calculations of some semi-conducting polymers*. Devi Ahilya. Dr. Brijesh Kumar, Lecturer, School of Physics, Devi Ahilya Vishwavidyalaya, Indore.

10. Lalit Mohan. *Studies of deformed nuclei*. BHU. Dr. L. Chaturvedi, Department of Physics, Banaras Hindu University, Varanasi.

11. Mathur, Tripti. *Nuclear reaction theory*. BHU. Prof. S.N. Mukherjee, Department of Physics, Banaras Hindu University, Varanasi.

12. Maurya, Kamlesh Kumar. *Solid state ionic materials*. BHU. Prof. S. Chandra, Department of Physics, Banaras Hindu University, Varanasi.

13. Mishra, Vandana. *Studies of engineering materials in regard to synthesis, growth and characterization*. BHU. Prof. O.N. Srivastava, and Dr. R.S. Tiwari, Department of Physics, Banaras Hindu University, Varanasi.

14. Neema, Daulal. *To study optical characteristics of sand under various conditions of moisture and particle size and to develop theoretical models to account for observed behaviour of sand*. Devi Ahilya. Dr. B.L. Sharda, G.S. Institute of Technology and Science, Indore.

15. Ojha, Vijay Shankar. *Transport properties of solids*. BHU. Dr. K.C. Sood, Department of Physics, Banaras Hindu University, Varanasi.

16. Pramendra Singh. *Nuclear structure studies*. BHU. Dr. L. Chaturvedi, Department of Physics, Banaras Hindu University, Varanasi.

17. Raina, Sanjay. *Cosmological constraints on particle physics data*. Delhi. Dr. R.P. Saxena, Department of Physics, University of Delhi, Delhi.

18. Rattan, Satish Kumar. *Electric field gradients in metallic alloys*. Panjab. Prof. S. Prakash and Dr. J. Singh, Department of Physics, Punjab Agricultural University, Ludhiana.

19. Ray, Bablu. *Whistlers and related ionospheric phenomena*. BHU. Dr. R.P. Singh, Department of Physics, Banaras Hindu University, Varanasi.

20. Sarbjit Singh. *Theory of fission-like phenomena in heavy-ion collisions*. Panjab. Prof. Raj K. Gupta, Department of Physics, Panjab University, Chandigarh.

21. Satish Kumar. *A theoretical study of spontaneous fission and cluster emission phenomena in radioactive nuclei*. Panjab. Prof. R.K. Gupta, Department of Physics, Panjab University, Chandigarh.

22. Shukla, Anshu. *Lattice properties of superlattices*. BHU. Dr. S.S. Kushwaha, Department of Physics, Banaras Hindu University, Varanasi.

23. Singh, Abhay Kumar. *Whistlers and low latitude ionospheric phenomena*. BHU. Dr. R.P. Singh, Department of Physics, Banaras Hindu University, Varanasi.

24. Singh, Ashok Kumar. *Polymer electrolyte*. BHU. Dr. R.P. Singh, Department of Physics, Banaras Hindu University, Varanasi.]

25. Singh, Raghavendra Pratap. *Liquid crystals*. BHU. Prof. Y. Singh, and Dr. Shri Singh, Department of Physics, Banaras Hindu University, Varanasi.

26. Singh, Ravi Prakash. *Equilibrium theory of polymer solutions*. BHU. Prof. Y. Singh, Department of Physics, Banaras Hindu University, Varanasi.

27. Srivastava, Arvind Kumar. *Growth and X-R-C characterisation of crystals*. BHU. Prof. O.N. Srivastava, Department of Physics, Banaras Hindu University, Varanasi.

28. Srivastava, Sunita. *A study of dissipative classical and quantum oscillators*. [Panjab. Dr. Vishwamittar, Department of Physics, Panjab University, Chandigarh.

29. Tiwari, Rajesh Kumar. *Confirmational theory of polymers*. BHU. Prof. Y. Singh, Department of Physics, Banaras Hindu University, Varanasi.

Chemistry

1. Aggarwal, Renu. *Studies in heterocyclic compounds*. Delhi. Prof. V.K. Ahluwalia, Department of Chemistry, University of Delhi, Delhi.

2. Anil Kumar. *Voltametric studies on redox polymers*. BHU. Dr. B.B. Prasad, Department of Chemistry, Banaras Hindu University, Varanasi.

3. Ashok Kumar. *Photo and radiation chemistry*. Delhi. Dr. B.K. Sharma, Department of Chemistry, University of Delhi, Delhi.

4. Datta, Partha. *Preparation and spectroscopic studies of organo-heteronuclear complexes with dithioligands*. BHU. Dr. N. Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

5. Easo, Shirley. *Solution studies on certain polyelectrolytes*. BHU. Dr. B.B. Prasad, Department of Chemistry, Banaras Hindu University, Varanasi.

6. Gopinathan, L. Anjali. *Studies in sulphur nitrogen heterocycles*. Kerala. Dr. C.P. Joshua, Prof. and Head, Department of Chemistry, University of Kerala, Trivandrum.

7. Gour, Aprajita. *Synthesis of metal complexes of drugs and study of their repository and anti-microbial activity*. Delhi. Dr. H.B. Singh, Department of Chemistry, University of Delhi, Delhi.

8. Gupta, Mamta. *Chemical studies of nitrogen heterocycles*. Delhi. Dr. S.M.S. Chauhan, Department of Chemistry, University of Delhi, Delhi.

9. Gupta, Seema. *Studies towards synthesis of corynoline type alkaloids*. Panjab. Prof. S.V. Kessar, and Dr. Y.P. Gupta, Department of Chemistry, Panjab University, Chandigarh.

10. Hashim, Mohammad Abul. *Molecular materials*. BHU. Dr. R.A. Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

11. Jain, Deepali. *Chemistry of alkali cations in transport mechanism biomembranes*. Delhi. Dr. Ramesh Chandra, Department of Chemistry, University of Delhi, Delhi.

12. Jasbir Singh. *Excess thermodynamic functions of some ether(s) chloroalkane systems at 303.15 K*. Panjab. Dr. S.C. Verma, and Dr. I.M. Joshi, Department of Chemistry, Panjab University, Chandigarh.

13. Jasmeet Kaur. *Polymer matrix : Synthesis and characterization*. Delhi. Dr. Devendra Kumar, Department of Chemistry, University of Delhi, Delhi.

14. Manjulal, S. *Studies on some complexes of lanthanide nitrates and perchlorates*. Kerala. Dr. P. Indrasenan, Prof., Department of Chemistry, University of Kerala, Trivandrum.

15. Majumdar, Pavani. *Studies on environmental chemistry*. BHU. Dr. B.B. Prasad, Department of Chemistry, Banaras Hindu University, Varanasi.

16. Mankotia, Anil Kumar Singh. *Studies in some photoreactions of Schiff bases*. Panjab. Prof. S.V. Kessar and Dr. Tej Vir Singh, Department of Chemistry, Panjab University, Chandigarh.

17. Mathur, Sandhya. *Theoretical study of molecular properties*. BHU. Prof. P. Chandra, Department of Chemistry, Banaras Hindu University, Varanasi.

18. Narasinga Rao, Tata. *Photo electro chemistry*. BHU. Dr. Lal Bahadur, Department of Chemistry, Banaras Hindu University, Varanasi.

19. Niyogi, Debyani Guha. *Chemistry of some new compounds containing fluorine—part I*. Panjab. Prof. R.D. Verma, Department of Chemistry, Panjab University, Chandigarh.

20. Patil, J.K. *Reactions of metal complexes*. Shivaji.

Dr. B.M. Sawant, Reader, Department of Chemistry, Shri Vajji University, Kolhapur.

21. Pradeep Kumar. *Chemical investigation of some medicinal plants*. BHU. Dr. V. Tripathi, Department of Chemistry, Banaras Hindu University, Varanasi.

22. Rajendran, G. *Synthesis and characterisation of some actinide complexes*. Kerala. Dr. P. Indrasenan, Prof., Department of Chemistry, University of Kerala, Trivandrum.

23. Rastogi, Soni. *Chemistry of natural products*. Delhi. Prof. D.K. Bhardwaj, Department of Chemistry, University of Delhi, Delhi.

24. Rawat, Manju. *Studies in potential biodynamic agents containing heterocyclic moiety*. Delhi. Dr. V.K. Ahluwalia, Department of Chemistry, University of Delhi, Delhi.

25. Razdan, Uday. *Processable thermally stable polymers*. Delhi. Dr. Devendra Kumar, Department of Chemistry, University of Delhi, Delhi.

26. Said, Mustafa Kamil. *Chelation of N.S. donors with biologically active trace elements*. BHU. Dr. Lallan Mishra, Department of Chemistry, Banaras Hindu University, Varanasi.

27. Sambasiva Rao, Ivaturi. *The electro-catalysis of oxygen*. BHU. Dr. Ravindra Nath Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

28. Santhosh Kumar, D. *Studies on the mechanism of some organic reactions*. Kerala. Dr. M. Rajesekharan Nair, Prof., Department of Chemistry, University of Kerala, Trivandrum.

29. Sehgal, Suresh Kumar. *Thermodynamics of binary mixtures containing hydrocarbons*. Panjab. Prof. D.V.S. Jain, Department of Chemistry, Panjab University, Chandigarh.

30. Selvan, P. Tamil. *Stereochemistry and molecular structure of metal chelates of sulphur ligands*. BHU. Prof. V.D. Gupta, Department of Chemistry, Banaras Hindu University, Varanasi.

31. Sharma, Jyotsna. *Chemistry of benzoquinones and naphthaquinones*. Delhi. Dr. R.N. Khanna, Department of Chemistry, University of Delhi, Delhi.

32. Singh, Raj Bihari. *Studies on bio-metallic thiocyanates and their reaction products with lewis base*. BHU. Dr. N. Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

33. Singh, Sanjeev Kumar. *Chemistry of alkali cations in transport mechanism of biomembranes*. Delhi. Dr. Ramesh Chandra, Department of Chemistry, University of Delhi, Delhi.

34. Sivakumar, S. *Organic reaction mechanism*. Kerala. Dr. M. Rajesekharan Nair, Prof., Department of Chemistry, University of Kerala, Trivandrum.

35. Srivastava, Alaka. *Stereochemical studies on nitrogen and sulphur compounds*. BHU. Prof. P.K. Srivastava, Department of Chemistry, Banaras Hindu University, Varanasi.

36. Srivastav, Kamal Kumar. *Membrane transport biophysical chemistry*. BHU. Prof. R.C. Srivastava, Department of Chemistry, Banaras Hindu University, Varanasi.

37. Usha, R. *Reactivity of silylated phosphatetrazenes*. Panjab. Prof. S.K. Vashisht, Department of Chemistry, Panjab University, Chandigarh.

38. Vij, Ashwani. *Preparation and characterization of*

some new derivatives of bis (fluorosulphuryl) imide. Panjab. Prof. R.D. Verma, Department of Chemistry, Panjab University, Chandigarh.

39. Yadav, Ram Dayalu. *Studies on oscillatory phenomenon in chemical system*. BHU. Prof. R.P. Rastogi, Department of Chemistry, Banaras Hindu University, Varanasi.

Earth Sciences

1. Joseph, Babu. *A contribution to the geology of the Drang traps associated sediments and metasediments of Dharamsala Area, District Kangra, Himachal Pradesh, India*. Panjab. Prof. M.N. Saxena, Department of Geology, Panjab University, Chandigarh.

2. Medikhrii, Kezunguld. *Petrology and geochemistry of nickeliferous magnetite ores at Pokhpur within the ophiolite complex of Nagaland*. Delhi. Dr. Mihir Deb, Department of Geology, University of Delhi, Delhi.

3. Sharma, Rajni. *Petrology and geochemistry of the granites and the associated acid volcanics around Jhunjhunu, District Jhunjhunu, Rajasthan, India*. Panjab. Dr. Naresh Kochhar, Department of Geology, Panjab University, Chandigarh.

4. Shastri, Anant. *Geochemical specialisation of Pya-pally complex, Kurnool District, Andhra Pradesh*. BHU. Dr. S.G. Karkare, Department of Geology, Banaras Hindu University, Varanasi.

5. Shiva Prakash. *Geochemical studies of Barda and allied intrusions, Saurashtra, Gujarat*. BHU. Dr. S.G. Karkare, Department of Geology, Banaras Hindu University, Varanasi.

6. Singh, Vinod Kumar. *Structure and tectonics*. Delhi. Prof. P.S. Saklani, Department of Geology, University of Delhi, Delhi.

7. Sinha, Dhananjay Kumar. *Study of part of Central Crystalline in Western Himalaya*. Dr. Pramod Kumar Verma, Department of Geology, University of Delhi, Delhi.

8. Vyas, Sushil Kumar. *Structural geology*. Delhi. Prof. P.S. Saklani, Department of Geology, University of Delhi, Delhi.

Engineering & Technology

1. Sharma, Anuradha. *Recovery of cobalt, nickel, copper from low grade ores (seabed nodules) using supported liquid membrane technique*. Panjab. Dr. D.K. Vohra, and Dr J.L. Vashist, Department of Chemical Engineering and Technology, Panjab University, Chandigarh.

2. Srivastava, Anupam. *Ceramic coated materials in biomedical engineering—Application and testing*. BHU. Prof. R. Prakash and Dr. A. Kapoor, Department of Biomedical Engineering, Banaras Hindu University, Varanasi.

3. Tavafoghi, Majid. *Effect of processing and heat treatment of engineering materials*. BHU. Prof. Vakil Singh, Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

BIOLOGICAL SCIENCES

Anthropology

1. Sarita. *Body composition of adult females of Chandigarh*. Panjab. Dr. S. Parkash, Department of Anthropology, Panjab University, Chandigarh.

Biophysics

1. Khanna, Deepika. *Lead toxicity and rat male reproduction*. Panjab. Dr. M R Bansal, Department of Biophysics, Panjab University, Chandigarh

Biochemistry

1. Gargari, Mir Latif Mosavi. *Interaction of isatins with ion activated enzymes and transport systems*. Panjab. Dr. R.C. Bansal, Chairman and Dr. Akhtar Mahmood, Reader, Department of Biochemistry, Panjab University, Chandigarh.
2. Jaspreet Kaur. *Molecular genetical expressions during cell differentiation and carcinogenesis*. Panjab. Prof. H.M. Dani, Department of Biochemistry, Panjab University, Chandigarh.

Botany

1. Bajpai, Arun Kumar. *Ecological studies of ethnobotanically important medicinal plants of Mandla and Bilaspur districts of Madhya Pradesh*. HS Gour. Dr. S.P. Bajpal, Reader, Department of Botany, Dr. Hari Singh Gour Vishwavidyalaya, Sagar.
2. Garg, Anju. *Embryological studies in some grasses belonging to the tribes poaeae, triticeae, Paniceae and Andropogoneae (Gramineae)* Panjab. Dr. R.K. Bhanwra, Reader, Department of Botany, Panjab University, Chandigarh.
3. Kalsi, Pawan. *Physio-morphogenetic studies on Dalbergia sissoo Roxb and Albizzia lebbek Benth*. Panjab. Prof. K.K. Dhir, Department of Botany, Panjab University, Chandigarh.
4. Nivasarkar, Manish. *Insect pest management through secondary plant metabolites: Control of forest pests and mosquitoes*. Devi Ahilya. Dr. M.M. Laloraya, Prof., Department of Life Sciences, Devi Ahilya Vishwavidyalaya, Indore.
5. Singh, Alka. *Aerobiological and immunochemical studies on fungal spores of different occupational sites*. Delhi. Dr. A.K. Bhatnagar, Department of Botany, University of Delhi, and Dr. A.B. Singh, Council of Scientific and Industrial Research, New Delhi.

Zoology

1. Farmahan, Brij Bala. *Ecological and taxonomic studies of aquatic insects in a hill stream*. Panjab. Dr. J.M. Julka, Scientist, Zoological Survey of India, Solan and Prof. H.S.

Vashisht, Department of Zoology, Panjab University, Chandigarh.

2. Mahendra, G. *Alterations in expression of genes during aging*. Prof. M.S. Kanungo, Department of Zoology, Banaras Hindu University, Varanasi.

3. Mangat, Sandeep Singh. *Quantitation of the cytogenetic damage in the occupationally exposed workers in vitro with and without the herbal drugs*. Panjab. Dr. G.P. Sharma, and Dr. R.C. Sobti, Department of Zoology, Panjab University, Chandigarh.

4. Ponnammal, K.N. *Studies on proutista moesta Westwood: Population dynamics, control and role as a vector of yellow leaf disease of arecanut*. Kerala. Dr. Gopalakrishna Karnavar, Reader, Department of Zoology, University of Kerala, Kariavattom.

5. Rad, Shahrokh Pashae. *Potentiality of Oryzaephilus mercator Fauvel and Plodia interpunctella Hubner as pests of dry fruits*. Panjab. Prof. H.R. Pajni, Department of Zoology, Panjab University, Chandigarh.

6. Sangeeta. *Studies on the effects of gossypol acetic acid and sulphasalazine: Two antifertility agents on the intestinal and liver functions of male albino rat*. Panjab. Prof. (Mrs.) Usha Kanwar, Department of Zoology, Panjab University, Chandigarh and Dr. S.N. Sanyal, Department of Bio-Sciences, Panjab University, Chandigarh.

7. Veeramachaneni, Radha Krishna Murthy. *Endocrine regulation of ovarian function*. BHU. Dr. A. Krishna, Department of Zoology, Banaras Hindu University, Varanasi.

Medical Sciences

1. Dixit, Chaitali. *Stress and biogenic amines under influence of indigenous drugs*. BHU. Prof. G.P. Dubey, Department of Basic Principles, Banaras Hindu University, Varanasi.

2. Mukherjee, Manjula. *Neuro endocrine changes under influence of certain indigenous drugs*. BHU. Prof. G.P. Dubey, Department of Basic Principles, Faculty of Ayurveda Banaras Hindu University, Varanasi.

3. Vidya Sagar Reddy, B. *Role of Basti in locomotor of children*. BHU. Dr. R.D. Sharma, Department of Prasuti Tantra, Faculty of Ayurveda, Banaras Hindu University, Varanasi.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Dalal, Haragopal. *Problem of gravitational collapse in general relativity and some characteristics of magneto-hydrodynamics*. Calcutta.
2. Devendra Prasad. *Study of transfer process in non-Newtonian fluids*. Rohilkhand. Dr. R N. Gupta, Hindu College, Moradabad.
3. Narasimhulu, Y. *On non-linear boundary-value problems*. Venkateswara. Prof. Veeravalli Srinivasan, Department of Mathematics, SVU College, Tirupati.
4. Soni, Deepak Chand. *Some problems in normal linear spaces*. Vikram.

5. Swamy, M. *On kinematic aspects of viscous compressible hydromagnetic fluid flows*. Osmania.

6. Syed Iqbal Ahmed. *Dispersion studies of Love waves and Stoneley waves in poroelastic solids*. Osmania.

Statistics

1. Krishna Reddy, Y. *Unified approach to optimal space designs for some stochastic reliability systems*. Venkateswara. Prof. N. Venugopalacharyulu, Department of Statistics, Sri Venkateswara University College, Tirupati.

2. Ray, Dilip. *Life distributions—characterizations and classifications*. Calcutta.

3. Victor Babu, B. R. *Some contributions to second order slope rotatable designs*. Nagarjuna.

Physics

1. Bhattacharyya, Rina. *Some studies on atmospherics in relation to source activity and propagation phenomena.* Calcutta.
2. Krishnaiah, Kilaru Siva Rama. *Experimental studies in metrology using speckle techniques.* Andhra.
3. Maitl, Satyendranath. *Studies on point defects in ionic and molecular crystals.* Calcutta.
4. Modak, Sujata. *Studies on the electronics structure of transition metal alloy surfaces.* Calcutta.
5. Raghavaiah, Chilukuri Venkata. *Studies on L X ray transition rate ratios, chemical effects and EDXRF method.* Andhra.
6. Ramesh, K. *Spectroscopic investigations on transition metal ions.* Venkateswara. Prof. Y. Prabhakara Reddy, Department of Physics, SVU College, Tirupati.
7. Rathnam, N.R. Muni. *Electrical, transport and magnetic properties of Co, (Ni, Mo) substituted iron-rich metal-metalloid glasses.* Hyderabad. Prof. A K. Bhatnagar.
8. Syam, Debapriya. *Study of proton-proton and heavy-ion collisions at relativistic energies within a hydrodynamical system.* Calcutta.

Chemistry

1. Bhattacharjee, Manish. *Studies on peroxo, fluoro (Peroxo), and fluoro compounds of phosphorous and hetero-ligand peroxo compounds of zirconium and uranium.* NEHU. Dr. M.K. Choudhuri, Department of Chemistry, North Eastern Hill University, Shillong.
2. Chandrasekhar, A.C.H. *Thermodynamic properties of organic liquid mixtures.* Venkateswara. Dr. G.K. Raman, Department of Chemistry, Sri Venkateswara University College of Engineering, Tirupati.
3. David, P. Jose. *Studies on the synthesis of Vitamin A and related compounds.* CUST. Dr. Paul A. Vatakencherry, Prof and Head, Department of Applied Chemistry, Cochin University of Science and Technology, Cochin.
4. Dhimar, Vijaykumar Jivanji. *Ionic polymers.* Baroda.
5. Dhumane, Waman Manohar. *Development of new solid semi-conducting materials based on metal tungstates and their applications in electrochemical devices.* Nagpur. Dr. R.B. Kharat, Department of Chemistry, Institute of Science, Nagpur.
6. Diwan, Nilima Chandrasekhar. *Investigations into trace determination of some elements by polarographic methods.* Nagpur. Dr. A.P. Joshi, Department of Chemistry, Nagpur University, Nagpur.
7. Garg, Sudha. *Isolation and chemical characterization of lectins of leguminosae.* Rohilkhand. Dr (Smt.) V. Mehra, Bareilly College, Bareilly.
8. Ghosh, Aditya Kumar. *Studies on the catalytic oxidation of coal tar hydrocarbons.* ISM Dr. P.K. Gangopadhyay, College of Ceramic Technology, Calcutta and Dr. R.N. Bhattacharya, Central Fuel Research Institute, Dhanbad.
9. Ghosh, Saroj Kumar. *Studies on the ion-solvent interactions on electrolytes and related structural changes in aquo-organic solvents.* North Bengal.
10. Jain, Rajesh Kumar. *Studies on zeolites molecular sieves.* HS Gour. Prof. S.P. Banerjee, Head, Department of Chemistry, Dr. Harisingh Gour Vishwavidyalaya, Sagar.
11. Lokhande, Pradip Dnyanbaji. *Synthesis in oxygen-nitrogen heterocyclics.* Nagpur. Dr. R.J. Ghiya, Department of Chemistry, Institute of Science, Nagpur.
12. Mehta, Sanjay Krishadas. *Chemically modified fibres and fabrics and related compounds.* Baroda.
13. Misra, Aditya Kumar. *Synthesis and ion exchange applications of some new inorganic ion exchangers.* Rohilkhand. Dr. R.P.S. Rajput, Bareilly College, Bareilly.
14. Moiz, M.A. *Investigation of ruthenium dioxygen complexes.* Bhavnagar. Prof. M.M. Taqui Khan, Director, Central Salt and Marine Chemicals Research Institute, Bhavnagar.
15. Nagarju, N. *Effect of ions on the surface properties and catalytic activity of oxide catalysts.* Bangalore. Dr. S.P.

Walvekar and Dr. N.M. Nanje Gowda, Department of Chemistry, Central College, Bangalore.

16. Pathak, Alekha. *Studies with zeolite molecular sieves.* HS Gour. Prof. S.P. Banerjee, Head, Department of Chemistry, Dr. Harisingh Gour Vishwavidyalaya, Sagar.
17. Sandhu, Narinder Kaur. *Physico chemical studies on clays and soils.* Rohilkhand. Dr. B.D. Kansal, Hindu College, Moradabad.
18. Sengupta, Dipak Kumar. *Synthesis of heterocyclic compounds of biological interest: Ring transformation in oxazole, imidazole and thiazole series.* Calcutta.
19. Siddiqui, Nafeesa. *Studies on natural products.* HS Gour. Dr. S.C. Garg, Reader, Department of Chemistry, Dr. Harisingh Gour Vishwavidyalaya, Sagar.
20. Singh, Meena. *Chemical and antimicrobial studies of plant products and other organic compounds.* HS Gour. Dr. J.T. Rao, Reader, Department of Chemistry, Dr. Harisingh Gour Vishwavidyalaya, Sagar.
21. Sirigi Reddy, R. *Synthetic approach to thiomorpholines and dithienoxides: The use of Z.E-bis styryl sulfones and alkylstyrylsulfonyl acetates as synthons.* Venkateswara. Prof. D. Bhaskara Reddy, Department of Chemistry, Sri Venkateswara University College, Tirupati.
22. Syed Mustafa Ali. *Homogeneous hydrogenation of cyclohexene catalysed by Rh(I) and Ir (I) complexes containing phosphine donor ligands.* Osmania.
23. Trivedi, Rameshchandra Narayanshanker. *Swelling of hydrophilic polymers.* Baroda.
24. Unnikrishnan, P.A. *Studies on the synthesis of β , santalenes β -santalols and related compounds.* CUST. Dr. Paul A. Vatakencherry, Prof. and Head, Department of Applied Chemistry, Cochin University of Science and Technology, Cochin.
25. Verma, Anil Kumar Narottamsingh. *Physico-chemical studies of some transition metal complexes.* Nagpur. Dr. S.P. Sangal, and Dr. S.R. Ghose, Department of Chemistry, Laxminarayan Institute of Technology, Nagpur.
26. Vishwanatham, Sunkari. *Study of some aspects of corrosion control of phosphor bronze in synthetic acid mine water.* ISM. Prof. N.S. Rawat, Indian School of Mines, Dhanbad.

Earth Sciences

1. Onyebuchi, Ndubueza Vin. *Hydrogeological and sedimentological studies of parts of Ambala District and adjoining Shiwalik Hills of Haryana and Himachal Pradesh, India.* Panjab.
2. Rasheed, Sameena. *Investigation of gamma and X-ray techniques for rapid and non-destructive analysis of some ores.* Osmania.
3. Sarma, Mrinmoy Kumar. *Sedimentological studies on the lower tertiary sand and stones of the Bapung-Umlynsha area of Jaintia Hills, Meghalaya.* Gauhati. Dr. I.M. Hazarika, Department of Geological Sciences, Gauhati University, Guwahati.
4. Tirumala Reddy, K. *Studies on evaluation and development of ground water potentialities in the area east of Osmansagar, Ranga Reddy District, Andhra Pradesh.* Osmania.

Engineering & Technology

1. Dhanvanthri, K. *Some aspects of synthesis and analysis of power system stabilisers.* Osmania.
2. Dhara, Debasis. *Some studies on the role of auxiliaries in the high temperature high pressure dyeing of polyester fibres.* IIT Delhi.
3. Mukhopadhyay, Gourisankar. *Vinyl photopolymerization using acetic acid and its chloroderivatives in combination with dimethylaniline as photoinitiators.* Calcutta.
4. Telang, Anil Digamber. *Some studies on boundary lubrication mechanism and lubricant metal compatibility.* Barkatullah. Dr. P.K. Rohatgi, Director, Regional Research Laboratory, Habibganj, Bhopal.

Agricultural Scientists Recruitment Board

KRISHI ANUSANDHAN BHAWAN, PUSA, NEW DELHI-110012

NOTICE

Agricultural Research Service Examination-1990

No. 1-2/88.ARS-II.

New Delhi, the 29th September, 1989

In accordance with the rules issued by the Indian Council of Agricultural Research, a competitive examination for recruitment to Scientists to the Agricultural Research Service in the pay scale of Rs. 2200-75-2800-EB-100-4000 will be held by the Agricultural Scientists Recruitment Board at the following Centres :

Anand, Bangalore, Bhopal, Bombay, Calcutta, Cochin, Coimbatore, Cuttack, Dehradun, Delhi, Hyderabad, Jodhpur, Lucknow, Ludhiana, Nagpur, Ranchi and Shillong.

The exact dates and venue of the examination, which will be held sometime during February-March, 1990 will be intimated to the admitted candidates well in time alongwith the time-table.

The approximate number of vacancies is 736 in the following disciplines. The number of vacancies in each discipline is given in parenthesis.

Plant Sciences : Agricultural Chemistry (4), Agricultural Entomology (36), Agronomy (71), Bio-Chemistry (12), Economic Botany (11), Forestry (1), Genetics & Cytogenetics (8), Horticulture (32), Microbiology (11), Nematology (6), Plant Breeding (40), Plant Pathology (16), Plant Physiology (14), Seed Technology (5), Soil Science-Soil Chemistry/Fertility/Microbiology (40), Soil Science-Pedology (8), Soil Science-Soil Physics and Soil & Water Conservation (13).

Animal Sciences : Animal Genetics & Breeding (25), Animal Nutrition (13), Animal Physiology (8), Animal Reproduction (20), Bio-Chemistry (20), Fish & Fishery Science (16), Fish Processing Technology (5), Livestock Production & Management (9), Livestock Products Technology (13), Microbiology (4), Pharmacology (2), Poultry Science (11), Veterinary Bacteriology & Virology (42), Veterinary Medicine (6), Veterinary Parasitology (10), Veterinary Pathology (6), Veterinary Public Health (17), Veterinary Surgery (2).

Physical Sciences : Bio-Physics (1), Organic Chemistry (5), Physics (8). **Economics, Statistics, Extension & Home Science :** Agricultural Economics (48), Agricultural Extension (25), Agricultural Statistics (25), Home Science (2).

Technology & Engineering : Agricultural Structures & Process Engineering (12), Chemical Engineer-

ing (1), Electrical Engineering (1), Electronics & Instrumentation (9), Farm Machinery & Power (15), Mechanical Engineering (6), Soil & Water Conservation Engineering (16), Textile Manufacture (5).

The number of vacancies is liable to change. Reservations will be made for candidates belonging to the Scheduled Castes and Scheduled Tribes in respect of vacancies as may be fixed by the ICAR.

Age : A candidate for admission to this examination must have attained the age of 21 years but not have attained the age of 30 years as on 1st January, 1990.

In-service employees of the ICAR less than 35 years of age (i.e. born not earlier than 1st January, 1955) are eligible to appear in this examination subject to possession of prescribed qualifications.

The upper age limit prescribed above will be relaxable upto a maximum of 5 years, if a candidate belongs to a Scheduled Caste or Scheduled Tribe. It is also relaxable for certain other categories e.g., bonafide displaced persons, ex-servicemen, etc.

Qualifications : A candidate for the Agricultural Research Service Examination must have a Master's Degree in the relevant subject with good academic record.

Explanation : For determining "Good Academic Record", the following criteria will be adopted : (i) A candidate holding a Ph.D. Degree should possess at least a second Class Master's Degree; (or) (ii) A candidate without a Ph.D. Degree should possess a high second Class Master's Degree and second Class in the Bachelor's Degree; (or) (iii) A candidate not possessing Ph.D. Degree but possessing second Class Master's Degree should have obtained first Class in the Bachelor's Degree.

Fee : Candidates seeking admission to this examination must pay to the Board with the completed application form a fee of Rs. 80/- (Rupees eighty only). In case of the candidates belonging to Scheduled Castes and Scheduled Tribes no fee is required to be paid. The fee is payable through Crossed Indian Postal Orders or Crossed Bank Draft in favour of Secretary, Indian Council of Agricultural Research at New Delhi G.P.O./State Bank of India etc., at New Delhi.

Note : (i) The candidates must write their names and addresses on the reverse of the Bank Draft/in the space provided in the Postal Orders.

(2) The Postal Orders should bear the signature of the issuing Post Master and a clear stamp of the issuing Post Office. The date of the IPO/Bank Draft in no case should be prior to the date of the issue of this Notice. The Bank Drafts should be valid for a period of six months.

(3) An application not accompanied by the prescribed fee is liable to be rejected summarily.

A refund of Rs. 54.00 (Rupees fifty-four only) will be made to a candidate who has paid the prescribed fee and is not admitted to the Examination by the Board. In no other case will a refund be made nor can the fee be held in reserve for any other examination or selection.

How to Apply : A candidate seeking admission to the examination must apply to the Secretary, A.S.R.B., Krishi Anusandhan Bhawan, Pusa, New Delhi-110012, on the application form, a format of which is published alongside. The application should be neatly type-written in double space on one side of the paper :

A candidate must send the following documents with his/her application :

1. Crossed Bank Draft/IPO for Rs. 80/- (unless remission of fee is claimed).

2. Two identical copies of recent passport size (5 cms. x 7 cms. appox.) photographs of the candidate—one pasted on the space provided on the application form and the other attached to the form. (Name, Centre and discipline of the candidate should be written on the back of the attached photograph).

3. Four self-addressed unstamped envelope of the size 11.5 cms x 27.5 cms.

Persons already in ICAR/Government Service whether in a permanent or temporary capacity or as workcharged employee other than casual or daily rated employee are, however, required to submit an undertaking that they have informed in writing their Head of Office/Department that they have applied for the examination.

Candidates are not required to submit alongwith their applications original certificates in support of their claims regarding age, educational qualifications, caste and fee remission etc., but may submit attested/certified copies of the certificates to determine their eligibility for admission to the examination.

Note : Candidates should not apply to ASRB for application form. The format of the application form printed alongwith this advertisement should be followed.

Last Date for Receipt of Application : The completed application form must reach the Secretary, Agricultural Scientists Recruitment Board, Krishi Anusandhan Bhawan, Pusa, New Delhi-110012 by

post or delivered in person on or before 20th November, 1989 and by 4th December, 1989 in the case of the candidates residing in the Andaman & Nicobar Islands, Lakshadweep, States/Union Territories in North Eastern Region, Laddakh Division of J & K, Sikkim and abroad. The envelope containing the application form should be superscribed with the words "application for ARS-1990 Examination". No application received after the prescribed date will be considered.

Important : For detailed rules, specific qualifications and other conditions for the examination, the "Employment News/Rozgar Samachar" dated the 14th October, 1989 may be referred.

R.P. Shukla
SECRETARY

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD

(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

AGRICULTURAL RESEARCH SERVICE EXAMINATION—1990

APPLICATION FORMAT

(TO BE FILLED IN BY THE CANDIDATE IN HIS/HER OWN HANDWRITING IN BLOCK LETTERS)

Roll No. _____
(To be filled in by ASRB)

Paste here a signed copy of your recent passport size photograph (5cm. x 7cm.)

Professional Subject. _____

Centre _____

Details of the Fee paid.

Name of Post Office/Bank	Number of Postal Orders/Bank Drafts	Date	Value in Rupees

- Name _____ Dr./Sh./Smt./Km. _____
(as recorded in Matriculation or equivalent certificate).
- Father/Husband's Name. _____
- Postal Address _____
for Correspondence.

Pin Code _____

4. Permanent Postal Address. _____

Pin Code. _____

5. (a) Date of birth (as recorded in Matriculation or equivalent certificate) (in Christian era). An attested/certified copy of the certificate should be attached.

Date	Month	Year

- (b) Age as on 1.1.1990

Year	Month	Days

6. (a) Are you a citizen of India by birth/domicile. _____

- (b) State your religion. _____

7. Do you belong to Scheduled Caste/Scheduled Tribe. If yes, indicate Caste/Tribe. (Attach an attested copy of the certificate from the competent authority) _____

8. Indicate whether you are a Central/State Govt. ICAR/ICAR Research Institute employee. (If your answer to above is 'yes' please indicate whether this application has been submitted through proper channel or is an advance copy). _____

9. (a) Language in which you wish to answer the paper in Essay & General Knowledge. (Please see Rules) _____

- (b) Indicate whether you would like to answer professional subject (Paper I & II) in Hindi or in English. (Option once exercised will not be altered on request).

10. (a) Give particulars of all examinations you have PASSED commencing with the Matriculation or equivalent examination.

Examination	Class or Division	OGPA/% Marks*	Year	Subject taken	Name of the University/Institute/Board.
(1))	(2)	(3)	(4)	(5)	(6)

*For conversion of grades, the formulae developed by ICAR will be used.

- (a) State for subject of specialisation at Post Graduate level.

(Attach documentary proof such as subject-wise marksheet/certificate from the concerned Department in the University.) _____

Important : All the subjects taken at Post-Graduate level must be indicated under Col. 5 and should be duly supported by attested copies of documentary evidence.

11. (a) Give particulars of the examination(s) at which you have appeared/intend to appear, the result of which has not been declared and the passing of which would render you eligible to appear at this examination.

Examination	Month and Year	Subject taken	Name of the University/Board
-------------	----------------	---------------	------------------------------

- (b) Please indicate whether you will complete all the requirements such as course work, thesis, viva-voce, project work, training etc. for obtaining the degree before the commencement of ARS-1990 Examination.

- (c) Have you appeared in any of the previous ARS Examination(s) conducted by the ASRB. If so, give details :

Year of Exam.	Roll No. & Centre	Prof. Subject	Language for Compulsory Subject	Result
---------------	-------------------	---------------	---------------------------------	--------

12. If you have at any time been employed, give details including those of present employment, if any.

Designation of Post held or description of work	Period with exact dates		Full Address of the office, firm or institution where employed	Whether the Employment is under Govt./ICAR/Scientific Institute/University
	From	To		

13. Have you ever been debarred or disqualified by the ICAR/ASRB or any Public Service Commission for any of their examination/selections? If 'yes' give details of the case.
14. List of documents attached to the application. (Please note that only attested/certified copies and Not original certificates are required to be attached to the application).

DECLARATION TO BE SIGNED BY THE CANDIDATE

I hereby declare that all statements made in this application are true, complete and correct to the best of my knowledge and belief.

Note : (Application not signed Signature _____ by the candidate is liable Date _____ to rejection). Place _____

**FOR THE USE OF PERSONS IN EMPLOYMENT
CERTIFICATE BY THE HEAD OF DEPARTMENT
OF OFFICE**

Certified that/Dr./Shri/Smt. Km. _____ holds temporary/permanent post _____ under the

Central/State Government/ICAR / University etc. w.e.f. _____ is employed as a work-charged employee other than a casual or daily-rated employee under the Central/State Government/ICAR/University etc. w.e.f. _____

His/her character, as far as known to me, is good and I am not aware of any circumstances which show that he/she would be unsuitable for appointment to any of the service, if successful in the examination.

Certified that he/she submitted his/her application to this Office on _____ for onward transmission to the Board.

Date

Signature

Designation

Department

Agricultural Research Service Examination—1990.

davp 89/729

Indian Institute of Management, Bangalore

OFFERS

Management Development Programme ON

Planning and Monitoring for Educational Institutions From November 27 to December 1, 1989

The Course aims at enhancing the skills of an institutional head towards better management of the day-to-day functioning of the institution and evolving strategies in order to guide the Institution over the long term.

LAST DATE FOR NOMINATIONS : NOVEMBER 13, 1989

Faculty Leader

DR. MALATHI SOMAIAH

For Details Write to :

Administrative Officer (M)

INDIAN INSTITUTE OF MANAGEMENT

Bannerghatta Road, Bangalore-560076.

THE UNIVERSITY OF BURDWAN

**RAJBATI : BURDWAN
WEST BENGAL**

Advertisement No. 8/89-90

Dated : October 4, 1989

Applications in the prescribed form are invited for the following posts in the approved scales of pay [Readership—Rs. 3700-125-4950-150-5700/-; Lectureship—Rs. 2200 - 75-2800 - 100 - 4000/-] PLUS dearness and other admissible allowances and pensionary benefits according to University Rules.

- | | |
|--|------------------------------|
| A. Readership in Business Administration | ...Two posts
(lien bound) |
| B. Readership in Law | ...Two posts |
| C. Readership in Philosophy | ...One post
(lien bound) |
| D. Lectureship in Chemistry | ...One post
(lien bound) |
| E. Lectureship in Mathematics | ...One post |
| F. Lectureship in Statistics | ...Two posts |
| G. Part-time Lectureship in Statistics | ...Three posts |
| H. Part-time Lectureship in Commerce | ...One post |
| I. Part-time Lectureship in Economics | ...Two posts |
| J. Part-time Lecturer in Sanskrit | ...Two posts |

Monthly Honorarium for Part-time Lectureships

Rs. 150/- per month Plus conveyance allowance as admissible under the Rules of the University.

Minimum Qualifications

For Readerships

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

At least five years' experience of teaching and/or research provided that

at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

For Lectureships

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being giving to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

For the post indicated at "E"

Desirable qualification : In consonance with para 2 of clause (b) above and the job requirements as given below preference should be given to candidates having post-graduate degree in Computer Science or any higher degree in Computer Science.

Job Requirements : In addition to theoretical classes the incumbent will have to take charge of the Computer-

aided Numerical Laboratory and conduct Numerical Practical classes.

For Part-time Lectureships

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a Foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Desirable Qualifications : Specialisation or Proficiency

For "A" : First post—Personnel Management ; Second Post—Marketing Management

For "B" : Comparative Public Law/Comparative Family Law/Criminal & Criminology/Business & Labour Laws/Landdialectics / Environmental Law

For "C" : Psychology

For "D" : Organic Chemistry with experience in teaching/research in the field of Bio-organic Chemistry

For "F" : Any branch of the subject

For "G" : Any branch of the subject

For "H" : International Trade

For "I" : Statistic & Econometrics

For "J" : First Post—Epigraphy
Second Post—Sanskrit/
Linguistics

Those who applied earlier in response to advertisement No. 18/88-89 dated 10.5.89 need not apply for the post indicated at "B".

Prescribed application forms may be obtained from the office of the Registrar, University of Burdwan personally on payment of Rs. 10/- in cash at the University sales counter from 11 a.m. to

12 noon on Saturday and 11 a.m. to 1-30 p.m. on other working days or by sending a self-addressed envelope (11" x 5") accompanied by Crossed Indian Postal Order of Rs. 10/- in favour of the Finance Officer, University of Burdwan.

The application forms will be available on and from 1.11.89 and last date for submission of application with requisite fee of Rs. 5/- is November 15, 1989.

M. Chatterjee
REGISTRAR

ALL INDIA INSTITUTE OF SPEECH & HEARING

MANASAGANGOTRI :
MYSORE-570 006

Advt. No. 9/89

Applications in the prescribed form are invited for the post of DIRECTOR at the above Institute.

Qualifications

(i) For Medical men : Essential : (1) A recognised medical qualification included in the I or II Schedule or Part II of III Schedule (other than licentiate qualification) to the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of the III Schedule should also fulfil the conditions stipulated in the sub-section (3) of Section 13 of the Indian Medical Council Act, 1956.

(2) Post-graduate qualification mentioned in Annexure II or equivalent i.e., F.R.C.S. (ENT) or M.S. (ENT).

(3) 12 years experience in the field of Logopedics (Speech & Hearing) out of which at least 5 years should be as Reader/Professor.

(4) Practical and administrative experience in the field of Medical Relief / Medical Research, Medical Education or Public Health Organisation.

These qualifications are, however, relaxable at the discretion of the Executive Council.

(ii) For Non-Medical men : Essential :
(1) A post-graduate degree—preferably a doctorate degree in Speech Pathology or Audiology from a recognised University.

(2) 12 years experience in Logopedics (Speech & Hearing) of which at least 5 years should be as Reader/Professor in Speech Pathology or Audiology.

(3) Teaching experience should include post-graduate teaching.

(4) Practical and administrative experience in the field of Speech and Hearing.

Desirable : FOR BOTH MEDICAL & NON-MEDICAL MEN :

(1) Doctorate Degree in Speech Pathology or Audiology

(2) Research and publications in professional journals (to give particulars in detail).

Scale of Pay

(i) For Medical men : Rs. 4100-125-4850-150-5300/- + NPA @ Rs. 900/- P.M.

(ii) For Non-medical men :

Rs. 4500-150-5700/- P.M.

Age Limit : Below 50 years relaxable depending on qualifications and experience.

In addition to pay, the post carries usual allowances, G.P.F., Pension, Death-cum-Retirement Gratuity, Medical Reimbursement facility, Leave Travel Concession etc., as admissible to Central Government Employees stationed at Mysore.

Prescribed application forms may be obtained from the undersigned on payment of Rs. 2/- (Re. 1/- for SC/ST candidates) through Indian Postal Order by sending a self-addressed and stamped (Re. 1.40) envelope (9" x 4" size). The duly filled in applications along with copies of certificates/marks cards/testimonials may be sent to the UNDERSIGNED BY NAME at the address mentioned above, on or before 20.11.1989. However, Indian nationals residing abroad may send the application before 30.11.1989. Candidates already in service must apply through proper channel.

S. Shankar

ADMINISTRATIVE OFFICER

UNIVERSITY OF DELHI

Ref : Advertisement No. Estab. IV/124/89 Dated : 27.9.1989

For non-Teaching Posts

CORRIGENDUM

S.No.	Department	Post	No. of Vacancies
1.	Central Office	(iii) Data Entry Operator	Five (1 reserved for Scheduled Caste) (1 reserved for Scheduled Tribe)

Other details about these posts including pay scale, essential qualifications remain unchanged.

The last date for receipt of applications for these posts only has been extended upto 31st October, 1989.

Delhi-110007
the 17th October, 1989.

J.C. Kochhar
REGISTRAR (Offg.)